

Appl. No. 10/701,335
Amtd. dated December 12, 2007
Reply to O.A. of January 29, 2007

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DEC. 12 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A system for registering two dimensional image data to intra-operatively digitized landmarks obtained during a joint arthroplasty procedure on a patient having a joint in need of such a procedure comprising:

a surgical navigation system capable of determining a position and an orientation of an object within a working volume, including a central processing unit, a display, a memory unit and a storage unit;

[[;]] means for importing the two dimensional image data for the joint into the memory unit;

means for performing an intra-operative anatomical survey of the joint and an associated limb to digitize selected landmarks and determining to determine a mechanical axis for the limb;

means for registering the two dimensional image data to the mechanical axis and display displaying [[the]] a registered image of the mechanical axis and the two dimensional image data on the display; and

means for assisting in guiding a cutting jig into position within the joint based on the landmarks while showing the registered two dimensional image data in relation to the landmarks, wherein the position and the orientation of the cutting jig can be tracked by the surgical navigation system.

2. (previously presented) The system of claim 1 wherein the assisting means displays the position of the cutting jig on the display relative to the registered two dimensional image data.

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3. (previously presented) The system of claim 1 wherein the assisting means also displays a modified image based on the registered two dimensional image data showing a resection plane of a bone within the joint.

4. (original) The system of claim 1 wherein the two dimensional image data is obtained pre-operatively.

5. (original) The system of claim 1 wherein the two dimensional image data is obtained intra-operatively.

6. (previously presented) The system of claim 1 wherein the system includes means for performing an initial kinematics assessment of the joint.

7. (previously presented) The system of claim 6 wherein the registering means also registers the image data to the digitized landmarks, and to the kinematics assessment.

8. (previously presented) The system of claim 1 wherein the assisting means also displays digitized landmarks along with the registered two dimensional image data.

9. (previously presented) The system of claim 1 wherein the assisting means also displays a proposed resection plane on the registered two dimensional image data.

10. (previously presented) The system of claim 1 wherein the assisting means also displays the varus/valgus data and the extension/flexion data.

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11. (currently amended) A method for registering two dimensional image data to intra-operatively digitized landmarks obtained during a joint arthroplasty procedure on a patient having a joint in need of such a procedure, the method comprising the steps of:

importing the two dimensional image data for the joint into memory of a surgical navigation system capable of determining the position and orientation of an object within a working volume wherein the surgical navigation system includes a display, a central processing unit and storage;

performing an anatomical survey of the joint and an associated limb;

digitizing selected landmarks based on the anatomical survey;

determining a mechanical axis for the limb based on the digitized landmarks;

registering the two dimensional image data to the mechanical axis and displaying the registered image data and mechanical axis on the display; and

guiding a cutting jig into position within the knee joint using the surgical navigation system based on the landmarks.

12. (original) The method of claim 11 including the additional step of displaying the position of the cutting jig on the display relative to the registered two dimensional image data.

13. (original) The method of claim 11 including the additional step of displaying a modified image based on the two dimensional image data showing a resection of a bone within the joint.

14. (original) The method of claim 11 wherein the two dimensional image data is obtained pre-operatively.

15. (original) The method of claim 11 wherein the two dimensional image data is obtained intra-operatively.

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16. (previously presented) The method of claim 11 including the additional step of performing an initial kinematics assessment of the joint.

17. (previously presented) The method of claim 16 wherein the two dimensional image data is also registered to the digitized landmarks, and to the kinematics assessment.

18. (original) The method of claim 11 wherein the digitized landmarks are displayed along with the registered two dimensional image data.